"PATENT"

#28/wm 6/5/91

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of	BEFORE THE EXAMINER
J. M. Canich	
Serial No. Division of 533,245 filed 06/04/90	Group Art Unit No. 116
For: OLEFIN POLYMERIZATION CATALYSTS	Baytown, Texas
	March 28, 1991

Commissioner of Patents and Trademarks
Washington, D.C. 20231

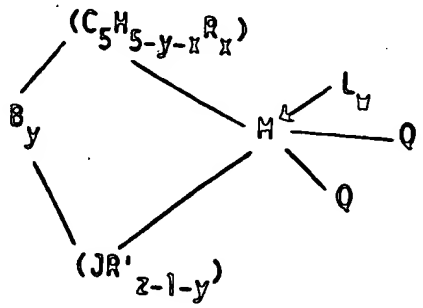
PRELIMINARY AMENDMENT

Sir:

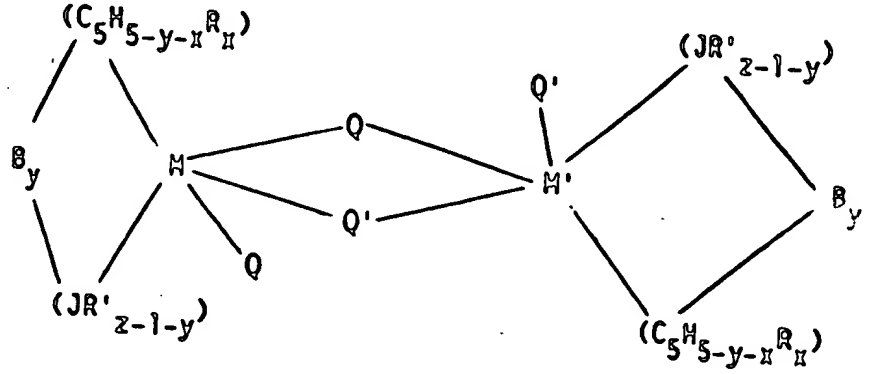
Please add the following new claims.

18. (new) A process for the polymerization of one or more olefins comprising conducting the polymerization in the presence of a catalyst system comprising:

(A) a Group IV B transition metal component of the formula:



or



wherein M is Zr, Hf or Ti;

($C_5H_{5-y-x}R_x$) is a cyclopentadienyl ring which is substituted with from zero to five groups R, "x" is 0, 1, 2, 3, 4, or 5 denoting the degree of substitution, and each R is, independently, a radical selected from a group consisting of C_1-C_{20} hydrocarbyl radicals, C_1-C_{20} substituted hydrocarbyl radicals wherein one or more hydrogen atoms are replaced by a halogen atom, C_1-C_{20} hydrocarbyl-substituted metalloid radicals wherein the metalloid is selected from the Group IV A of the Period Table of Elements and halogen radicals or ($C_5H_{5-y-x}R_x$) is a cyclopentadienyl ring in which two adjacent R-groups are joined forming C_4-C_{20} ring to give a saturated or unsaturated polycyclic cyclopentadienyl ligand;

(JR'_{z-1-y}) is a heteroatom ligand in which J is an element with a coordination number of three from Group V A or an element with a coordination number of two from Group VI A of the Period Table of Elements, each R' is, independently a radical selected from a group consisting of C_1-C_{20} hydrocarbyl radicals, substituted C_1-C_{20} hydrocarbyl radicals wherein one or more hydrogen atoms is replaced by a halogen atom, and "z" is the coordination number of the element J;

each Q is, independently any univalent anionic ligand or two Q's are a divalent anionic chelating agent;

"y" is 0 or 1 when w is greater than 0; y is 1 when w is o, when "y" is 1, B is a covalent bridging group containing a Group IV A or V A element;

L is a Lewis base where "w" denotes a number from 0 to 3; and

(B) an alumoxane.

19. (new) The process of claim ~~18~~ 1 wherein the heteroatom ligand group J element is nitrogen, phosphorous, oxygen or sulur.

3 ~~20.~~ (new) The process of claim 1 ~~18~~ wherein Q is a halogen or hydrocarbyl radical.

4 ~~21.~~ (new) The process of claim 2 ~~19~~ wherein the heteroatom ligand group J element is nitrogen.

5 ~~22.~~ (new) The process of claim 1 ~~18~~ wherein M is zirconium or hafnium.

6 ~~23.~~ (new) The process of claim 1 ~~18~~ wherein the mole ratio of Al:M is from 10:1 to about 20,000:1.

B' Cont'd

7 ~~24.~~ (new) The process of claim 1 ~~18~~ wherein Q is independently halogen, hydride, or a substituted or unsubstituted C_1-C_{20} hydrocarbyl, alkoxide, aryloxide, amide arylamide, phosphide or arylphosphide, provided that where any Q is a hydrocarbyl such Q is different from $(C_5H_{4-x}R_x)$ or both together are an alylidene or a cyclometallated hydrocarbyl.

Respectfully submitted,

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CERTIFICATE UNDER 37 CFR 1.8(a)

I hereby certify that I have a reasonable basis to expect that this correspondence will be deposited with the United States Postal Service as first class mail in an envelope with sufficient postage affixed and addressed to Commissioner of Patents and Trademarks, Washington, D.C. 20231, on March 28, 1991.

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